REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1-12 are now in the application and claims 1, 4, 9 and 10 are independent.

The Office Action dated February 12, 2009 has been received and carefully reviewed. Each issue raised in the Office Action is addressed below. Reconsideration and allowance of the present application are respectfully requested in view of the following remarks.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 2 and 4-9 stand rejected under 35 U.S.C. § 102(b) as unpatentable over U.S. Pat. No. 4,699,805 to Seelbach et al. ("Seelbach"). Applicants submit the Examiner has failed to establish a *prima facie* case of obviousness and respectfully traverse the rejection. A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

In order to establish a *prima facie* case of obviousness under 35 U.S.C. § 103(a), the cited references must teach or suggest each and every element in the claims. See M.P.E.P. § 706.02(j); M.P.E.P. 2141-2144.

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claims 1 and 9 have been amended to recite a combination of elements in a substrate processing apparatus comprising the first supply tube including a first mass controller, a first valve and an inert gas line connected thereto downstream of the first valve between the first valve and the single gas supply member, and the second supply tube including a second mass controller, a second valve, a reaction gas container and a third valve, the reaction gas container located between the second valve and the third valve, the second supply tube including an inert gas line connected thereto downstream of the third valve between the third valve and the single gas supply member, and a heater between the second mass controller and the single gas supply member. Applicants respectfully submit that this combination of elements as set forth in independent claims 1 and 9 is not disclosed or made obvious by the prior art of record, including Seelbach.

Seelbach shows what might be construed as a heating member 16, first supply tube 62, second supply tubes 50 and 60, carrier gases 36-42 forming a first gas, and metallic source materials 32 and 34 forming a second gas supplied to the processing chamber and a gas supply member 12.

Applicants respectfully submit that contrary to the rejection, gas supply member 12 is not a single gas supply member as claimed, but is instead constructed with two separate and independent gas supply members 12 and 44, as shown in Figure 2. To further emphasize the distinctions over Seelbach, claims 1 and 9 have been amended to recite specific details of the features of the two gas supply tubes. The first supply tube now includes a first mass controller, a first valve and an inert gas line connected thereto downstream of the first valve between the first valve and the single gas supply member and the second gas supply tube now includes a second mass controller, a second valve, a reaction gas container and a third valve, the reaction gas container located between the second valve and the third valve, the second supply tube including an inert gas line connected thereto downstream of the third valve between the third valve and the single gas supply member, and a heater between the second mass controller and the single gas supply member. Seelbach only discloses mass flow controllers 52 and 58, but shows no valves in this specific arrangement, no reaction gas container and no inert gas line as specified. Applicants submit this specific combination of structure constitutes a feature of the invention which permits efficient batch processing one atomic layer at a time. Applicants respectfully submit that the combination of elements as set forth in independent claims 1 and 9 is not disclosed or made obvious by the prior art of record, including Seelbach, for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested. With regard to dependent claim 2, Applicants submit that claim 2 depends from independent claim 1 which is allowable for the reasons set forth above, and therefore claim 2 is allowable based on their dependence from claim 1. Reconsideration and allowance thereof are respectfully requested.

Independent claim 4 has also been amended to advance the prosecution. Claim 4 now requires a single gas supply member consisting of only one porous nozzle within the processing chamber which supplies said gases into said processing chamber and which has a portion

extending to a region whose temperature is equal to or higher than a decomposition temperature of at least one of said two gases, and the two supply tubes including a first mass controller and a first valve for delivering an oxidizing agent containing oxygen from an oxidizing agent supply, and a second mass controller for delivering a metal organic gas from a metal organic gas supply to a gas container, and one of the two supply tubes including a heater between the first or second mass controller and said single gas supply member. The gas supply member 12 of Seelbach actually consists of two separate and independent gas supply members 12 and 44, as shown in Figure 2. By the instant amendment, the rejection which attempts to treat the supply tube of Seelbach as "a single" structure including two different but combined supply tubes is avoided. Furthermore, Seelbach clearly fails to show or suggest a first valve for delivering an oxidizing agent containing oxygen from an oxidizing agent supply, and a second mass controller for delivering a metal organic gas from a metal organic gas supply to a gas container.

With regard to dependent claims 2 and 5-8, Applicants submit that claims 2 and 5-8 depend, either directly or indirectly, from independent claim 1 which is allowable for the reasons set forth above, and therefore claims 2 and 5-8 are allowable based on their dependence from claim 1. Reconsideration and allowance thereof are respectfully requested.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Seelbach in view of Raaijmakers. This rejection is respectfully traversed. Raaijmakers was cited for a showing of ALD processing. While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 10 has been amended to recite a combination of elements in a processing method using the apparatus set forth, including, *inter alia*, two supply tubes extending into the processing chamber through which two gases respectively flow independently from each other; a first gas including an oxidizing agent including oxygen and a second gas including a metal organic gas, and a single gas supply member which supplies gases from the supply tubes into said processing chamber and which has a portion consisting of only one porous nozzle extending to a region whose temperature is equal to or higher than a decomposition temperature of at least one of said two gases. In addition, the method now comprises, inter alia, supplying a first one of said two gases to the single gas supply member through a first one of said two

supply tubes for a first period of time while supplying an inert gas through a second one of said two supply tubes; and after said first period of time, alternately supplying a second one of said two gases to the single gas supply member through the second one of said two supply tubes for a second period of time to form a film or films on said substrate or substrates while supplying an inert gas through the first one of said two supply tubes. Applicants respectfully submit that this combination of elements as set forth in independent claim 10 is not disclosed or made obvious by the prior art of record, including Seelbach and Raaijmakers.

The Examiner states that it would have been obvious to apply the ALD process of Raaijmakers to the apparatus of Seelbach. Applicants respectfully submit that neither Seelbach nor Raaijmakers shows or suggests the use of a first gas including an oxidizing agent including oxygen and a second gas including a metal organic gas, and a single gas supply member which supplies gases from the supply tubes into said processing chamber and which has a portion consisting of only one porous nozzle. And Applicants respectfully submit that neither Seelbach nor Raaijmakers shows or suggests the steps of supplying a first one of said two gases to the single gas supply member through a first one of said two supply tubes for a first period of time while supplying an inert gas through a second one of said two supply tubes; and after said first period of time, alternately supplying a second one of said two gases to the single gas supply member through the second one of said two supply tubes for a second period of time to form a film or films on said substrate or substrates. Applicants respectfully submit that the combination of elements and steps as set forth in independent claim 10 is not disclosed or made obvious by the prior art of record, including Seelbach and Raaijmakers, for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Claims 1-9 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Miyazaki in view of Seelbach. This rejection is respectfully traversed. Seelbach has been discussed above, comments of which are incorporated herein. Miyazaki is cited to show single gas supply member 30'. Miyazaki provides no additional disclosure of processing gas control apparatus. Miyazaki fails to show or suggest the specific configuration of first supply tube, including a first mass controller, a first valve and an inert gas line connected thereto downstream of the first valve between the first valve and the single gas supply member,

and second gas supply tube, including a second mass controller, a second valve, a reaction gas container and a third valve, the reaction gas container located between the second valve and the third valve, the second supply tube including an inert gas line connected thereto downstream of the third valve between the third valve and the single gas supply member, and a heater between the second mass controller and the single gas supply member, and therefore cannot remedy the defects of Seelbach discussed above. With regard to dependent claims 2, 3 and 5-8, Applicants submit that claims 2, 3 and 5-8 depend, either directly or indirectly, from independent claim 1 which is allowable for the reasons set forth above, and therefore claims 2, 3 and 5-8 are allowable based on their dependence from claim 1. Reconsideration and allowance thereof are respectfully requested.

Claim 10 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Miyazaki in view of Seelbach, and further in view of Raaijmakers. This rejection is also respectfully traversed. Miyazaki is cited to show single gas supply member 30'. Seelbach and Raaijmakers have been discussed above, comments of which are incorporated herein. Applicants respectfully submit that neither Seelbach nor Raaijmakers nor Miyazaki, either alone or in combination, shows or suggests the use of a first gas including an oxidizing agent including oxygen and a second gas including a metal organic gas, and a single gas supply member which supplies gases from the supply tubes into said processing chamber and which has a portion consisting of only one porous nozzle. And Applicants respectfully submit that neither Seelbach nor Raaijmakers nor Miyazaki, either alone or in combination, shows or suggests the steps of supplying a first one of said two gases to the single gas supply member through a first one of said two supply tubes for a first period of time while supplying an inert gas through a second one of said two supply tubes; and after said first period of time, alternately supplying a second one of said two gases to the single gas supply member through the second one of said two supply tubes for a second period of time to form a film or films on said substrate or substrates while supplying an inert gas through the first one of said two supply tubes. Applicants respectfully submit that the combination of elements and steps as set forth in independent claim 10 is not disclosed or made obvious by the prior art of record, including Miyazaki, Seelbach and Raaijmakers, for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are

respectfully requested.

New claims 11 and 12 have been added to address other features of the controller of the instant invention, not shown or suggested by the prior art of record.

Conclusion

All objections and rejections raised in the Office Action having been properly traversed and addressed, it is respectfully submitted that the present application is in condition for allowance. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Notice of same is earnestly solicited.

Prompt and favorable consideration of this Amendment is respectfully requested.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Paul T. Sewell, Registration No. 61,784, at (703) 205-8000, in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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